



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P O Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

06/24/2010

Thomas Schneck
Schneck & Schneck
P O Box 2-E
San Jose, CA 95109-0005

EXAMINER

AJBADE AKONAI, OLUMIDE

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 06/24/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/555,044	10/28/2005	Thanh Van Do	OSL-028	2304
TITLE OF INVENTION: VIRTUAL DEVICE				

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/24/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590

06/24/2010

Thomas Schneck
 Schneck & Schneck
 P O Box 2-E
 San Jose, CA 95109-0005

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/555,044

10/28/2005

Thanh Van Do

OSL-028

2304

TITLE OF INVENTION: VIRTUAL DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/24/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
AJIBADE AKONAL, OLUMIDE	2617	370-338000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P O Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/555,044

10/28/2005

Thanh Van Do

OSL-028

2304

7590

06/24/2010

EXAMINER

AJIBADE AKONAI, OLUMIDE

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 06/24/2010

Thomas Schneck
Schneck & Schneck
P O Box 2-E
San Jose, CA 95109-0005

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 518 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 518 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/555,044

Examiner

OLUMIDE T. AJIBADE AKONAI

Applicant(s)

DO ET AL.

Art Unit

2617

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/22/2010.
2. ☒ The allowed claim(s) is/are 1-19, 21-31 and 33-52.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-19, 21-31 and 33-52 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding **Claim 1**, Haller et al 7,039,033 discloses a Virtual Device composed of a multitude of stationary and/or portable electronic devices comprising: a first Open Device with an available inner structure and a network interface; at least one Primitive Device arranged to communicate with other devices and act as a pure slave to said devices, at least one Closed Device with a closed inner structure and a network interface; said Open and Closed devices being connected in a Personal Area Network, a Personal Area Network middleware being installed in said first Open Device said first Open Device being arranged to act as a personal Area Network controller, said Personal Area Network middleware being arranged to redirect an output stream from one device to an input port on another device, said Personal Area Network middleware being arranged to redirect an application to a specific device present in said Personal Area Network. The instant invention discloses an open device comprising a Personal Area Network middleware that is arranged to store and maintain a device profile, said device profile including information on at least identity, type, capabilities and services offered by any Open, Closed or Primitive Devices available for said Private Area Network, said Open Device being arranged to discover and register any devices present in said Personal Area Network, said Personal Area Network middleware being arranged to store and maintain a user

Art Unit: 2617

profile, said user profile including information on at least which Open, Closed or Primitive Devices are members of said Private Area Network, which Open, Closed or Primitive Devices that are available for said Private Area Network, which Open, Closed or Primitive Devices should be visible on an external network, the distribution of services among Open or Closed Devices present, and the distribution of resources among Open or Closed Devices present, said Personal Area Network middleware further including a user interface enabling the user to control the Personal Area Network middleware, and an Application Programming Interface to said Personal Area Network middleware allowing applications access to capabilities and functions in said Personal Area Network middleware. The above novel features in combination with other limitations of the claim are neither taught, suggested, nor made obvious by Haller et al or any other prior art of record. Claims 2 and 11-14 are allowable by virtue of their dependency on claim 1.

Regarding **Claim 3**, Haller et al 7,039,033 discloses a Virtual Device composed of a multitude of stationary and/or portable electronic devices comprising: an Open Device with an available inner structure and a network interface; at least one Primitive Device arranged to communicate with other devices and act as a pure slave to said devices, at least one Closed Device with a closed inner structure and a network interface; said Open and Closed devices being connected in a Personal Area Network, a Personal Area Network middleware being installed in said Open Devices, said first Open Device being arranged to act as a personal Area Network controller, said Personal Area

Art Unit: 2617

Network middleware being arranged to redirect an output stream from one device to an input port on another device, said Personal Area Network middleware being arranged to redirect an application to a specific device present in said Personal Area Network. The instant invention discloses wherein said Personal area network middleware being distributed between said open devices, said Personal Area Network middleware is arranged to store and maintain a device profile, said device profile including information on at least identity, type, capabilities and services offered by any Open, Closed or Primitive Devices available for said Private Area Network, said Open Device being arranged to discover and register any devices present in said Personal Area Network, said Personal Area Network middleware being arranged to store and maintain a user profile, said user profile including information on at least which Open, Closed or Primitive Devices are members of said Private Area Network, which Open, Closed or Primitive Devices that are available for said Private Area Network, redirection information, which Open, Closed or Primitive Devices should be visible on an external network, the distribution of services among Open or Closed Devices present, and the distribution of resources among Open or Closed Devices present, said Personal Area Network middleware further including a user interface enabling the user to control the Personal Area Network middleware, and an Application Programming Interface to said Personal Area Network middleware allowing applications access to capabilities and functions in said Personal Area Network middleware. The above novel features in combination with other limitations of the claim are neither

taught, suggested, nor made obvious by Haller et al or any other prior art of record. Claims 4-7 and 15 are allowable by virtue of their dependency on claim 3.

Regarding **Claims 8 and 9**, Haller et al 7,039,033 discloses a Virtual Device composed of a multitude of stationary and/or portable electronic devices comprising: an Open Device with an available inner structure and a network interface; at least one Primitive Device arranged to communicate with other devices and act as a pure slave to said devices, at least one Closed Device with a closed inner structure and a network interface; said at least one closed device being equipped with a network interface connected to an external network which includes a Personal area network server, a personal area network middleware being installed on said server, said Open and Closed devices and said server forming a Personal area network operated by said personal area network middleware, said Personal Area Network middleware being arranged to redirect an output stream from one device to an input port on another device, said Personal Area Network middleware being arranged to redirect an application to a specific device present in said Personal Area Network, said server being arranged to store a backup copy of information stored in said personal area network, and synchronize said backup copy with said information. The instant invention discloses wherein said Personal Area Network middleware is arranged to store and maintain a device profile, said device profile including information on at least identity, type, capabilities and services offered by any Open, Closed or Primitive Devices available for said Private Area Network, said Open Device being arranged to discover and register any devices present in said Personal

Area Network, said Personal Area Network middleware being arranged to store and maintain a user profile, said user profile including information on at least which Open, Closed or Primitive Devices are members of said Private Area Network, which Open, Closed or Primitive Devices that are available for said Private Area Network, redirection information, which Open, Closed or Primitive Devices should be visible on an external network, the distribution of services among Open or Closed Devices present, and the distribution of resources among Open or Closed Devices present, said Personal Area Network middleware further including a user interface enabling the user to control the Personal Area Network middleware, and an Application Programming Interface to said Personal Area Network middleware allowing applications access to capabilities and functions in said Personal Area Network middleware. The above novel features in combination with other limitations of the claims are neither taught, suggested, nor made obvious by Haller et al or any other prior art of record. Claims 10, 16 and 17 are allowable by virtue of their dependency on claims 8 and 9.

Regarding **Claim 18**, Haller et al 7,039,033 discloses a system, comprising: at least one first device capable of transmitting a first output stream via a first communication interface; a second device comprising a second communication interface capable of receiving said first output stream via a connection local to the first and second devices, said second device and at least one third device forming a Personal Area Network, said second device being connectable to a further network external to the Personal Area Network and external to the connection local to the first and second devices. The instant

Art Unit: 2617

invention discloses a Personal Area Network middleware, executed by at least a fourth device, storing at least a user profile including redirection information for said at least one third device of the Personal Area Network: the second device being arranged to intercept and redirect said first output stream to an input port of said at least one third device based on said redirection information; and the fourth device being in communication with the second device over the further network external to said first and third devices, and wherein redirection of said first output is performed via the fourth device communicating with the second device over the further network. The above novel features in combination with other limitations of the claim are neither taught, suggested, nor made obvious by Haller et al or any other prior art of record. Claims 19, 21-31 and 33-35 are allowable by virtue of their dependency on claim 18.

Regarding **claim 36**, Fitton et al 7,346,369 discloses a system, comprising: at least one first device capable of transmitting a first output stream via a first communication interface; a second device comprising a second communication interface capable of receiving said first output stream, said second device and at least one third device forming a Personal Area Network; a Personal Area Network middleware, executed by at least said second device. Thanh et al "The Device Management Service" discloses storing at least a user profile including redirection information for said at least one third device of a Personal Area Network, and arranged to intercept and redirect said first output stream to an input port of a third device based on said redirection information. Haller et al 7,039,033 discloses a wireless personal area network WPAN

Art Unit: 2617

comprises a plurality of communication devices, wherein one of the wireless communication devices comprises PAN middleware; and wherein the PAN middleware allows the wireless gateway device 106 to be visible to external network/WAN while the other devices 107 that are connected to the wireless gateway device 106 in the personal area network are not visible to the external network/WAN. The instant invention discloses a second device comprising a second communication interface capable of receiving said first output stream via a connection local to the first and second devices, said second device and at least one third device forming a Personal Area Network, said second device being connectable to a further network external to the Personal Area Network and external to the connection local to the first and second devices; a Personal Area Network middleware, executed by at least said second device, storing at least a user profile including redirection information for said at least one third device of the Personal Area Network, and arranged to intercept and redirect said first output stream to an input port of said at least one third device based on said redirection information; and wherein said user profile further comprises means for presenting which of said first, second and third devices are visible on the further network. The above novel features in combination with other limitations of the claim are neither taught, suggested, nor made obvious by Fitton et al, Thanh et al, Haller et al or any other prior art of record.

Claims 37-52 are allowable by virtue of their dependency on claim 36.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should

Art Unit: 2617

preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Burr 20030078062 discloses a method for discovery and routing within mobile Ad-Hoc networks.

Olkkonen et al 6,842,460 discloses Ad Hoc network discovery menu.

Nykanen et al 6,285,889 discloses information output system, method for outputting information and terminal devices for outputting information via mobile communication network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUMIDE T. AJIBADE AKONAI whose telephone number is (571)272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

OA

/Charles N. Appiah/
Supervisory Patent Examiner, Art Unit 2617